# Temperature Model
## of Oroville Facilities and Feather River (WQRRS)

## Model Description

**Engine WQRRS**

**Model Components**
- Lake Oroville Model
- Thermalito-Complex Model
- Feather River Model
- Integration

**User Interface**
- Map screen
- Input screen
- Output screen

## Model Steps

**Calibration -2002**
- Actual flow
- Actual meteorology
- Simulated vs. Observed data

**Benchmark – Long-Term**
- Synthesized hydrology
- Synthesized meteorology

**What-If Scenarios**
- Benchmark study
- Proposed changes

## Model Output

**Lake**
- Temperature profile
- Cold water storage volume
- Temperature of reservoir release

**River**
- Temperature
- Flow
- Water depth

**Diversions**
- Temperature

## Model Theory
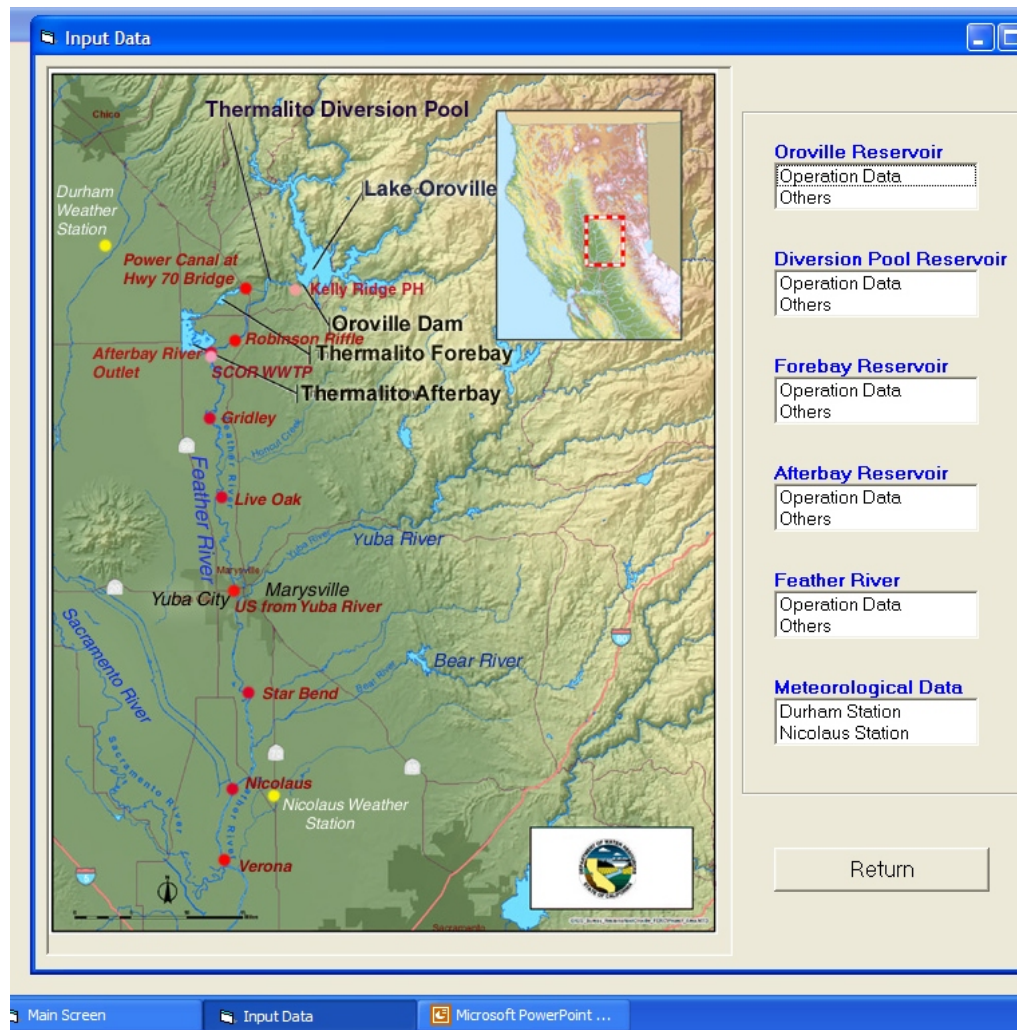
**Water Balance**
- Tributary inflows
- Diversions
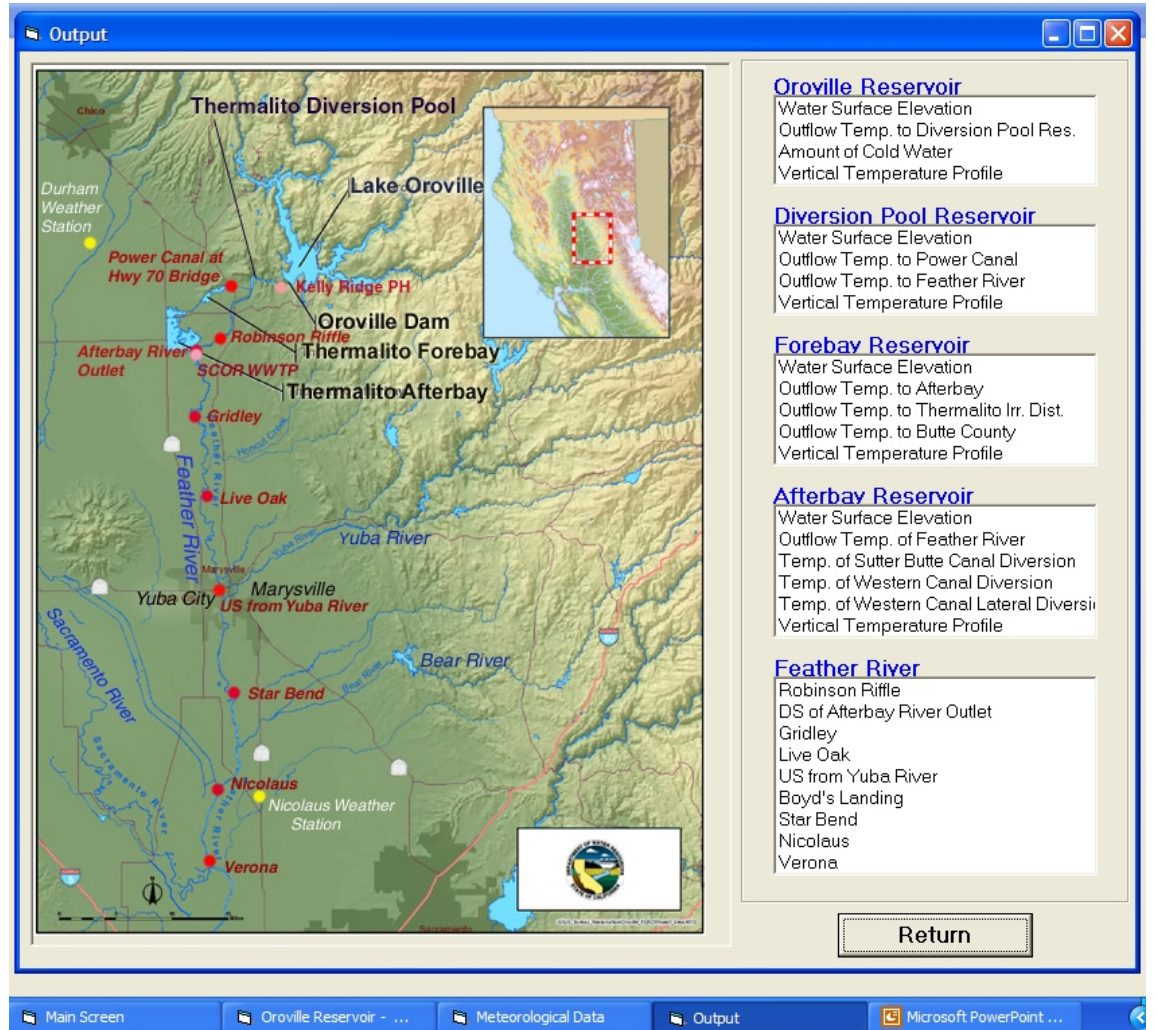- Release and pump back

**Heat Budget**
- Solar radiation
- Evaporation
- Advection, diffusion, and mixing

**Control Volume**
- Lake layers
- River segments



*Input Data*



*Output Data*